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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: William R. Kennedy, et al. Art Unit: 3749
Serial No.: 10/608,901
Filed: June 27, 2003
Confirmation No.: 7782
For: MINE DOOR SYSTEM INCLUDING AN AIR PRESSURE RELIEF DOOR
Examiner: Harold Joyce

July 8, 2005

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

TO THE COMMISSIONER OF PATENTS AND TRADEMARKS,
SIR:

Applicants acknowledge receipt of the Notice of Allowance and Fee(s) Due dated June 10, 2005.

The Examiner's statement of reasons for allowance contains an incomplete summary of the features recited in the allowed claims. Accordingly, Applicants submit the invention is patentable over the prior art for the reasons set forth below.

A reason for the allowance of claim 1 and the claims depending therefrom (claims 2-11) is that the cited prior art neither teaches nor fairly suggests the mine door recited in claim 1. Claim 1 is directed to a mine door for installation in a passageway of a mine comprising a leaf adapted to be mounted in the passageway for swinging between a closed position and an open position. The leaf has a first face facing in a direction in which it swings open and a second face facing an opposite direction in which it swings closed. The leaf is adapted for installation in the passageway where the leaf when closed is subject to a differential in air pressure involving higher pressure on one of the faces of the leaf than on the other of the faces of the leaf. The leaf has an opening therein for passage of air therethrough from adjacent one of the faces of the leaf to adjacent the other of the faces to more nearly equalize the pressure on the faces and thereby reduce the force required to

open or close the leaf. A closure is mounted adjacent the opening and movable between a closed position blocking passage of air through the opening and an open position allowing passage of air. A first actuator is mounted adjacent to the closure for moving the closure between the open position and the closed position.

A reason for the allowance of claim 12 and the claims depending therefrom (claims 13-18) is that the cited prior art neither teaches nor fairly suggests the mine stopping system recited in claim 12. Claim 12 is directed to a mine stopping system installed in a passageway of a mine for closing the passageway. The system comprises a wall extending at least partway across the passageway. A door frame is installed in or adjacent the wall to define a doorway to allow passage of machinery. A door leaf is hinged on the door frame for swinging between a closed position in the doorway and an open position. The leaf has a first face facing in a direction in which it swings open and a second face facing an opposite direction. The leaf when closed is subject to a differential in air pressure involving higher pressure on one of the faces of the leaf than on the other of the faces. The door leaf is substantially parallel with the door frame when the leaf is in the closed position. An opening is disposed in at least one of the leaf, wall and door frame for passage of air therethrough to more nearly equalize the pressure on the faces of the leaf and thereby reduce the force required to open or close the leaf. A power-operated closure for the at least one opening is movable between a closed position blocking passage of air and an open position allowing passage of air.

A reason for the allowance of claims 19 and 20 is that the cited prior art neither teaches nor fairly suggests the mine door unit recited in claim 19. Claim 19 is directed to a mine door unit for installation in a passageway of a mine comprising a door

frame adapted to be installed in the passageway to define a doorway sized and shaped to allow passage of machinery. A leaf is hinged on the door frame for moving between a closed position for at least partially closing the doorway and an open position to permit passage of machinery through the doorway. A man doorway in the leaf is sized and shaped to allow passage of personnel. A man door is mounted on the leaf for closing the man doorway. A pressure relief opening is in the leaf and not in the man door. A closure is mounted on the leaf for moving between a closed position for closing the pressure relief opening and an open position for relieving pressure against the leaf to facilitate opening of the leaf. The closure is not on the man door.

A reason for the allowance of claim 21 and the claims depending therefrom (claims 22-24) is that the cited prior art neither teaches nor fairly suggests the mine stopping system as recited in claim 21. Claim 21 is directed to a mine stopping system forming an airlock space in a mine passageway comprising a plurality of stoppings mounted in the passageway in spaced apart relation. The stoppings form an airlock with an airlock space therebetween. Each stopping includes a door leaf mounted for moving between open and closed positions. At least one of the stoppings includes a pressure relief opening therein and a closure mounted adjacent the opening for moving between a closed position for closing the pressure relief opening and an open position for relieving air pressure against the leaf to facilitate opening or closing of the leaf. A first actuator is mounted adjacent the closure for moving the closure between the open position and the closed position.

A reason for the allowance of claim 25 and the claims depending therefrom (claims 26-30) is that the cited prior art neither teaches nor fairly suggests the mine door recited in claim 25. Claim 25 is directed to a mine door for installation

in a passageway of a mine comprising a power-operated leaf adapted to be mounted in the passageway for swinging between a closed position and an open position. The leaf has a first face facing in a direction in which it swings open and a second face facing an opposite direction in which it swings closed. The leaf is adapted for installation in the passageway where the leaf when closed is subject to a differential in air pressure involving higher pressure on the first face of the leaf than on the second face of the leaf. An opening is formed in the leaf for passage of air therethrough from adjacent one of the faces of the leaf to adjacent the other of the faces to more nearly equalize the pressure on the faces and thereby reduce the force required to open or close the leaf. A power-operated closure is mounted adjacent the opening and movable between a closed position blocking passage of air through the opening and an open position allowing passage of air. The closure is mounted such that the closure opens toward the higher pressure. The power-operated closure is movable from the closed position to the open position against pressures up to a first maximum pressure differential. The power-operated leaf is moveable from the closed position to the open position against pressures up to a second maximum pressure differential. The second maximum pressure differential is less than the first maximum pressure differential.

A reason for the allowance of claim 31 and claim 32, which depends from claim 31, is that the cited prior art neither teaches nor fairly suggests the mine door as recited in claim 31. Claim 31 is directed to a mine door for installation in a passageway of a mine comprising a leaf adapted to be mounted in the passageway for swinging between a closed position and an open position. The leaf has a first face facing in a direction in which it swings open and a second face facing an opposite direction in which it swings closed. The leaf is adapted for

installation in the passageway where the leaf when closed is subject to a differential in air pressure involving higher pressure on the first face of the leaf than on the second face of the leaf. A first actuator moves the leaf between the closed position and the open position. An opening is formed in the leaf for passage of air therethrough from adjacent one of the faces of the leaf to adjacent the other of the faces to more nearly equalize the pressure on the faces and thereby reduce the force required to open or close the leaf. A closure is movable between a closed position blocking passage of air through the opening and an open position allowing passage of air. A second actuator moves the closure between the open position and the closed position. The second actuator is mounted to the second face of the leaf such that when the leaf is in the closed position the second actuator is not subjected to the higher pressure.

A reason for the allowance of claim 33 and the claims depending therefrom (claims 34 and 35) is that the cited prior art neither teaches nor fairly suggests the mine door recited in claim 34. Claim 34 is directed to a mine door for installation in a passageway of a mine comprising a power-operated leaf adapted to be mounted in the passageway for swinging between a closed position and an open position. The leaf has a first face facing in a direction in which it swings open and a second face facing an opposite direction in which it swings closed. The leaf is adapted for installation in the passageway where the leaf when closed is subject to a differential in air pressure involving higher pressure on the first face of the leaf than on the second face of the leaf. An opening is formed in the leaf for passage of air therethrough from adjacent one of the faces of the leaf to adjacent the other of the faces to more nearly equalize the pressure on the faces and thereby reduce the force required to open or close the leaf. A power-operated closure is movable between a closed position blocking passage of air through

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the opening and an open position allowing passage of air. A switch simultaneously activates the power-operated leaf and the power-operated closure.

Respectfully submitted,



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